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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

NOTE, JANIS L

ART UNIT	PAPER NUMBER
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1795

NOTIFICATION DATE	DELIVERY MODE
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09/11/2008

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

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patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

Office Action Summary	Application No. 10/670,320	Applicant(s) WATANABE ET AL.	
	Examiner Janis L. Dote	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 July 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,8,10,13,14,21-23 and 26-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,8,10,13,14,21-23 and 26-28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

1. A request for continued examination (RCE) under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicants' submission filed on Jul. 24, 2008, has been entered.

2. The examiner acknowledges the cancellation of claim 24 and the amendments to claims 1, 21, and 26 filed on Jun. 27, 2008, which was entered on Jul. 24, 2008, as requested in the RCE. Claims 1, 8, 10, 13, 14, 21-23, and 26-28 are pending.

3. As noted in the Advisory action mailed on Jul. 15, 2008, the "Amendment to the claims" section filed on Jun. 27, 2008, did not comply with 37 CFR 1.121. The amendment to claim 26 deletes the recitation "dissolving or dispersing a composition, which comprises a polyester prepolymer (A) capable of reacting . . . and drying the toner particles" without using the proper markings to indicate its deletion.

However, in the interest of compact prosecution, the "Listing of claims" in the "Amendment to the claims" section

filed on Jun. 27, 2008, has been entered and replaces all prior versions and listings of claims in the instant application.

4. The rejection of claim 24 under 35 U.S.C. 112, first paragraph, set forth in the office action mailed on Apr. 7, 2008, paragraph 6, has been mooted by the cancellation of claim 24 filed on Jun. 27, 2008, which was entered on Jul. 24, 2008.

The rejections of claims 1, 8, 10, 13, 14, 21-23, and 26-28 under 35 U.S.C. 112, first paragraph, set forth in the office action mailed on Apr. 7, 2008, paragraph 7, have been withdrawn in response to the amendment to claims 1, 21, and 26 filed on Jun. 27, 2008, which was entered on Jul. 24, 2008.

The rejections under 35 U.S.C. 103(a) of claims 1, 8, 10, 21-24, 26, and 27 over US 2003/0138717 A1 (Yagi) and of claims 1, 8, 10, 21-24, and 27 over US 2003/0152859 A1 (Emoto'859), set forth in the office action mailed on Apr. 7, 2008, paragraphs 10 and 14, respectively, have been withdrawn in response to the amendment to claims 1, 21, and 26 and the cancellation of claim 24 filed on Jun. 27, 2008, which was entered on Jul. 24, 2008, in response to the Rule 132 declaration executed by Atsuko Sanabe on Jun. 27, 2008, filed on Jun. 27, 2008, and in response to the "revised" certified

English-language translation of priority document Japanese Patent application 2002-365782, filed on Jun. 27, 2008. In the declaration, Atsuko Sanabe, who was the translator of the first certified English-language translation of priority document Japanese Patent application 2002-365782, "filed on Jun. 29, 2007 [sic: Jul. 9, 2007]," states that translational errors occurred in the first translation and that the first translation "has been fully revised by me due to the translational inconsistencies as provided in the Table [in the declaration]," e.g., "[m]istranslation due to unfamiliarity of the translator with this art . . . and resulting misinterpretation of Japanese sentence . . . [c]areless mistakes made in reading JP 2002-365782 . . . [c]areless mistakes made in translation . . .". Accordingly, in light of the disclosure in the revised certified English-language translation of priority document Japanese Patent application 2002-365782 filed on Jun. 27, 2008, applicants have perfected their claim to foreign priority under 35 U.S.C. 119 for the subject matter recited in instant claims 1, 8, 10, 21-23, 26, and 27. The revised certified English-language translation of priority document Japanese Patent application 2002-365782 provides antecedent basis as set forth under 35 U.S.C. 112, first paragraph, for the subject matter recited in instant claims 1, 8, 10, 21-23, 26, and 27.

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For example, see the revised translation, paragraphs 0009, 0011, 0019, 0021-0023, 0026-0028, 0034, 0036, and 0045. (Contrary to applicants' statement in the response filed on Jun. 27, 2008, page 16, paragraph 0005 in the revised translation describes prior art toners, not the subject matter recited in the instant claims.) Accordingly, Yagi and Emoto are no longer prior art with respect to the subject matter recited in instant claims 1, 8, 10, 21-23, 26, and 27.

(The examiner notes that contrary to the translator's declaration statement, the first translation of priority document JP 2002-365782 was filed in the instant application on Jul. 9, 2007, not Jun. 29, 2007. In addition, the examiner notes that the translator's declaration does not provide a reason for the revision at page 17, lines 4-5, of the marked-up copy of the revised translation.)

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 13, 14, 23, and 27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to

particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 13 and 14 are indefinite in the phrase "[t]he toner composition according to Claim 1, wherein the toner particles have a spindle form" (emphasis added). It is not clear how the "toner composition" recited in claim 1 comprises toner particles when the toner composition is used make toner particles.

Claim 23 is indefinite in the phrase "[t]he toner composition according to Claim 1, further comprising an external additive which is present at least on a surface of the toner particles" (emphasis added). It is not clear how the "toner composition" recited in claim 1 comprises an external additive that is present on the surface of the toner particles when the toner composition does not comprise toner particles, but is used to make toner particles.

Claim 27 is indefinite in the phrase "developer comprising a toner composition according to Claim 1; and a carrier" (emphasis added) because it is not clear how the toner composition recited in claim 1 that is the raw material used to make toner particles is used in a developer comprising a carrier.

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7. Claims 8, 10, and 22 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicants are required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claims 8, 10, and 22 are drawn to the toner composition recited in claim 1, which is used to make toner particles. Claims 8, 10, and 22 are not drawn to the toner recited in instant claim 1, from which claims 8, 10, and 22 depend. Although claims 8, 10, and 22 may further limit the toner composition recited in claim 1, they do not require all of the toner limitations recited in claim 1. Thus, claims 8, 10, and 22 are not proper dependent claims. See 35 U.S.C. 112, fourth paragraph; MPEP (8th Ed., Rev. 6, Sep. 2007) Appendix L. Patent Laws, p. L-24; and MPEP 608.01(n), sections II and III.

8. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

9. US 2003/0138717 A1 (Yagi) was published on Jul. 24, 2003, prior to the filing date of Sep. 26, 2003, of the instant application. The inventive entity of Yagi differs from that of the instant application. Thus, Yagi qualifies as prior art

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under 35 U.S.C. 102(a). Accordingly, Yagi qualifies also as prior art under 35 U.S.C. 103(a) and 103(c).

10. Claim 28 is rejected under 35 U.S.C. 103(a) as unpatentable over Yagi, as evidenced by the Polymer Technology Dictionary, page 444, and by applicants' admission at page 26, line 20, to page 27, line 2, page 28, lines 10-18, and Table 1 at page 83, examples 1-6 and comparative examples 3 and 4, of the originally filed specification (applicants' admission 1), combined with US 2002/0037467 A1 (Watanabe).

Yagi discloses a toner comprising toner particles comprising a binder resin, carnauba wax as the releasing agent, and carbon black, and organic fine resin particles 1 adhered to the surface of the toner particles at a coverage ratio of 32%. See paragraphs 0239-0273; example 2 in paragraph 0274; and Table 1 at page 23, example 2. The binder resin comprises a modified polyester resin and an unmodified polyester resin, low molecular weight polyester 1. The reference low molecular weight polyester resin has a weight average molecular weight of 6700, which is within the second resin weight average molecular weight range of 2,000 to 10,000 recited in instant claim 28. Organic fine resin particles 1 have a Tg of 57°C, and an average particle size of 100 nm. The Tg meets the Tg range

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recited in instant claim 28. The organic fine resin particle average particle size of 100 nm is 0.016 times the average particle size of the toner particles ($6.07 \mu\text{m} = 6070 \text{ nm}$), which is within the range of 0.002 to 0.2 times recited in instant claim 28.

Yagi does not expressly describe the modified polyester resin in example 2 as a urea-modified polyester resin as recited in the instant claim. However, in paragraph 0137, Yagi teaches that urea-modified polyester resins are obtained by reacting a polyester prepolymer having an isocyanate group with an amine. In example 2, the modified polyester resin is obtained by reacting the polyester prepolymer 1 having an isocyanate group with the ketimine compound 1. See Yagi, paragraphs 0245-0250 and 0263. Thus, based on the teachings in Yagi, it is reasonable to conclude that the modified polyester in the toner in example 2 of Yagi is a urea-modified polyester resin. The burden is on applicants to prove otherwise. In re Fitzgerald, 205 USPQ 594 (CCPA 1980).

The Yagi toner in example 2 is obtained by: (1) preparing a master batch comprising the carbon black and a polyester resin; (2) preparing a material solution comprising the carnauba wax and the low molecular weight polyester 1; (3) forming a pigment-wax dispersion by mixing the master batch of step (1), the

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material solution, and additional low molecular weight polyester; (4) mixing the pigment-wax dispersion of step (3), a polyester prepolymer resin comprising isocyanate groups, which is capable of reacting with an active hydrogen to form the modified polyester, and a ketimine compound, which is a blocked amine with an active hydrogen, in an organic solvent; (5) dispersing the mixture of step (4) in an aqueous medium comprising the organic fine resin particles, while reacting the ketimine compound with the polyester prepolymer to form the modified polyester and to form toner particles; (6) removing the organic solvent from the dispersion of step (5); (7) washing the toner particles resulting from step (6); and (8) drying the washed toner particles. Paragraphs 0252-0273. The Yagi process of making steps meet the process steps recited instant claim 28.

Yagi does not explicitly disclose that the binder resin in example 2 has a glass transition T_g of not lower than 35°C and lower than 55°C recited in instant claim 28. Nor does Yagi disclose that the binder resin comprises the tetrahydrofuran (THF) insoluble components recited in instant claim 28.

The originally filed specification discloses that the toner binder resin preferably has a T_g of not lower than 35°C and lower than 55°C . According to the originally filed specification, when the T_g is too high, the resultant toner has poor low temperature

fixability; and when the Tg is too low, "the resultant toner has poor preservability and thereby the blocking problem in that the toner particles adhere to each other, resulting in formation of a block of the toner tends to occur." The originally filed specification, page 26, line 20, to page 27, line 2, and Table 1 at page 83, examples 1-6 and comparative example 3.

The originally filed specification discloses that the binder resin comprises THF-insoluble components in an amount of 2 to 30 wt% based on the total weight of the binder resin. According to the originally filed specification, when the amount of THF-insolubles is too low, the resultant toner has poor hot offset resistance; and when the amount is too high, the toner has poor low temperature fixability. Originally filed specification, page 28, lines 10-18, and Table 1, examples 1-6 and comparative example 4.

As discussed above, the toner binder resin in the Yagi toner particles and the Yagi toner particles meet the compositional limitations recited in instant claim 28; but the properties discussed supra are not disclosed expressly. As discussed supra, the Yagi toner in example 2 is obtained by a process that meets the steps recited in instant claim 28. Yagi teaches that its binder resin preferably has a Tg of from 50 to 70°C. According to Yagi, when the Tg is too low, the high

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temperature preservability of the toner deteriorates.

Paragraph 0154. Yagi discloses that the toner in example 2 has low temperature fixability and offset resistance, and does not contaminate the image forming members used, such as the fixing device and image bearing member. Paragraph 0032; and Table 3 at page 23, example 2, which reports that the toner in example 2 has a "lower fixing temperature" of 140°C and exhibits no occurrence of offset for temperatures below 220°C. Table 3 also reports that no toner filming was observed. These are the properties sought by applicants. Accordingly, because the Yagi binder resin and toner particles in example 2 meet the compositional limitations recited in the instant claim 28 and the Yagi toner appears to have the toner properties sought by applicants, it is reasonable to presume that the binder resin in the Yagi toner in example 2 has the Tg recited in instant claim 28 and comprises the THF insoluble components recited in instant claim 28. The burden is on applicants to prove otherwise. In re Fitzgerald, 205 USPQ 594 (CCPA 1980).

Yagi also does not explicitly disclose that the organic fine resin particles are embedded in the surface of the toner particles as recited in instant claim 28. However, as discussed above, organic fine resin particles 1 in example 2 of Yagi are present on the surface of the toner particles in a coverage

ratio of 32%. The Yagi toner in example 2 is obtained by a process that meets the steps recited in the instant claim. Therefore, it is reasonable to presume that the Yagi organic fine resin particles are embedded in the surface of the toner particles as recited in the instant claims. The burden is on applicants to prove otherwise. Fitzgerald, supra.

Yagi does not appear to exemplify organic fine resin particles comprising a crosslinked resin as recited in the instant claims. However, Yagi teaches that the organic fine resin particles can equally comprise a thermoplastic resin or a thermosetting resin. Paragraph 0078, lines 3-4. A thermosetting polymer is usually defined as "a low molecular weight polymer, which may be cured, or cross-linked so as to yield a cross-linked plastics material or a vulcanized rubber." See the Polymer Technology Dictionary, page 444. The term "crosslinking agent" broadly recited in the instant claim encompasses anything that aids the crosslinking process. It is also well known in the polymer art that crosslinked thermosetting polymers are cross-linked by crosslinking agents. Thus, on the present record, Yagi teaches cross-linked organic fine particles that meet the cross-linked particulate resin recited in the instant claim. Yagi further teaches that the thermoplastic resins and thermosetting resins include vinyl

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resins, polyurethane resins, epoxy resins, or polyester resins.

Paragraph 0078-0079.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Yagi, to use a thermosetting resin as the resin in the organic fine resin particles, such that the resultant fine resin particles are cross-linked with a cross-linking agent as recited in the instant claims. It would have also been obvious for that person to use the resultant organic fine resin particles as the organic fine resin particles in the toner in example 2 of Yagi. That person would have had a reasonable expectation of successfully obtaining a toner that does not prevent the toner from adhering to a receiving member and has the properties as discussed by Yagi.

Yagi further discloses forming a toner image on a receiving member and fixing the toner image to the receiving member with a fixing belt. Paragraphs 0385-0386. However, Yagi does not disclose the use of fixing belt device as recited in instant claim 28.

Watanabe teaches a fixing device comprising a fixing belt **B** and a pressure roller **R2** to be used in fixing a toner image to a receiving member. See Fig. 1 and paragraphs 0131-0132. The fixing belt **B** is supported by the heat roller **R3** and the fixing

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roller **R1**. Watanabe teaches that at the nip section between the fixing belt **B** and the pressure roller **R2**, the fixing belt **B** is "caved in to prevent the offset problem and a problem in which the receiving paper is caught by the fixing belt **B**." According to Watanabe, when the fixing belt **B** or both the fixing belt **B** and the fixing roller **R1** deform like a shape of U at the nip section, "the releasability of the toner image from . . . the fixing belt **B** is increased; and the receiving paper **Pa** is discharged at a relatively large peeling angle from . . . the fixing belt **B**." Paragraph 0135.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings in Watanabe, to use the fixing device comprising a fixing belt and a pressure roller as taught by Watanabe as the fixing belt device in the image forming method taught by Yagi using the toner rendered obvious over the teachings of Yagi. That person would have had a reasonable expectation of successfully practicing an image forming method that provides a fixed toner image on a receiving member having the benefits disclosed by Yagi and that prevents toner offset and paper jam at the fixing nip as taught by Watanabe.

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11. US 2003/0152859 A1 (Emoto'859) was published on Aug. 14, 2003, prior to the filing date of Sep. 26, 2003, of the instant application. The inventive entity of Emoto'859 differs from that of the instant application. Thus, Emoto'859 qualifies as prior art under 35 U.S.C. 102(a). Accordingly, Emoto'859 qualifies also as prior art under 35 U.S.C. 103(a) and 103(c).

12. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Emoto'859, as evidenced by applicants' admissions at page 41, line 10, to page 42, line 8, of the instant specification (applicants' admission 2), combined with US 4,980,257 (Anno).

Emoto'859 discloses a toner that comprises toner particles. The toner particles comprise a binder resin, carnauba wax as the releasing agent, and a colorant. The binder resin comprises a modified polyester resin and an unmodified polyester. See example 4 at page 12, and paragraph 0214. The binder resin comprises 6 wt% of tetrahydrofuran insoluble components, which is within the amount ranges recited in instant claims 13 and 14. The binder resin has a peak molecular weight M_p of 6,500, a number-average molecular weight M_n of 3,500, and a T_g of 49°C. See Table 1, example 4. The binder resin T_g meets the T_g range recited in instant claims 13 and 14. The toner has a spindle

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form and a volume average particle size (Dv) of 6.2 μm , and a ratio of the volume average particle size (Dv) to the number average particle size of 1.10. Paragraph 0147, lines 12-13, and Table 2, example 4. The spindle form meets the form limitation recited in instant claim 13.

According to Emoto'859 its toner provides high quality images having good reproducibility of a micro dot image. The toner has highly reliable cleanability, good low-temperature fixability, and good transferability. Paragraphs 0011-0012.

Emoto'859 does not expressly describe the modified polyester resin as a urea-modified polyester resin as recited in the instant claims. However, in paragraph 0059, Emoto'859 teaches that urea-modified polyester resins are obtained by reacting a polyester prepolymer having an isocyanate group with an amine. In example 1, paragraph 0027, Emoto'859 shows that a polyester prepolymer having an isocyanate group reacted with the ketimine compound of formula 1 forms a urea-modified polyester resin. In example 4, the modified polyester resin is obtained by reacting a polyester prepolymer having an isocyanate group with the ketime compound of formula 1 under reaction conditions similar to that used in example 1. Thus, based on the teachings in Emoto'859, it is reasonable to conclude that the modified polyester in the toner in example 4 of Emoto'859 is a urea-

modified polyester resin. The burden is on applicants to prove otherwise. In re Fitzgerald, 205 USPQ 594 (CCPA 1980).

Emoto'859 also does not disclose that the toner satisfies the dimensional relationships recited in instant claim 14. However, as discussed above, the toner disclosed by Emoto'859 has a spindle form that meets the shape limitation recited in instant claim 13. Furthermore, the instant specification at page 41, lines 10-25, discloses that when the ratio r_2/r_1 is too small, the dot reproducibility and transfer efficiency deteriorate; if the ratio r_2/r_1 is too large, the toner has a "form near the spherical form and therefore the cleaning problem tends to occur." The instant specification at page 41, line 26, to page 42, line 8, also discloses that if the ratio r_3/r_2 is too small, the toner has "a form near a flat form, and thereby the toner has low transferability," and when the ratio r_3/r_2 is 1.0, the "toner can be rotated while the major axis is the rotation axis." The Emoto'859 toner in example 4 exhibits good cleanability, dot reproducibility, transferability, and image qualities. See Emoto'859, Table 3 at page 15, example 4. The Emoto'859 toner exhibits the properties sought by applicants. Accordingly, because the Emoto'859 toner has a spindle form and appears to exhibit the properties sought by applicants, it is reasonable to presume that the Emoto'859 toner satisfies the

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dimensional relationships recited in instant claim 14. The burden is on applicants to prove otherwise. In re Fitzgerald, 205 USPQ 594 (CCPA 1980).

Emoto'859 does not disclose that the unmodified polyester resin has a weight-average molecular weight as recited in instant claims 13 and 14. However, Emoto'859 teaches that the unmodified polyester resin preferably has a weight average molecular weight of 10,000 to 300,000, which overlaps the range of 2,000 to 10,000 recited in instant claims 1, 21, and 24. Paragraph 0072, line 10, and paragraph 0074, lines 3-5.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Emoto'859, to use an unmodified polyester resin having a weight-average molecular weight as recited in the instant claims as the unmodified polyester in the toner in example 4 of Emoto'859. That person would have had a reasonable expectation of successfully obtaining a spindle shaped toner having the benefits disclosed by Emoto'859.

Emoto'859 does not disclose that the surface of the toner particles in example 4 comprises a particulate material where the particulate material is embedded on the surface of the toner particles as recited in instant claims 13 and 14.

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Anno teaches thermally fixing minute cross-linked vinyl resin particles **a** having a Tg of 83°C and minute vinyl resin particles **b** having a Tg of 81°C to the surface of toner particles using a heat-treating and impact type modifying machine, the Nara Hybridization System. Both minute resin particles **a** and **b** have an average particle size of 1 micron. Col. 16, lines 40-45; col. 20, lines 51-55; col. 21, lines 24-58; and col. 23, lines 43-55. The Tg's are within the Tg ranges recited in instant claims 13 and 14. The minute resin particles **a** and **b** meet the compositional limitations recited in instant claims 13 and 14. The average particle size of 1 micron is about 0.16 times the average particle size of the Emoto'859 toner particles in example 4 (6.2 μm = 6200 nm), which meets the particle size ratio limitation recited in instant claims 13 and 14. Anno further teaches that it is desirable that the minute resin particles of the first thermoplastic resin have an average particle size of 0.05 to 3 microns, i.e., 50 nm to 3000 nm; that the minute resin particles of the second thermoplastic resin have an average particle size of 0.4 to 3 microns, i.e., 400 to 3,000 nm; and that both are no less than 1/100 and no more than 1/5 of the average particle size of the toner particles. Col. 11, lines 17-23. According to Anno, toner particles comprising the minute resin particle **a** and **b**, as taught by Anno,

have stable charging properties, high flowability, and "high cleaning property." Col. 3, lines 54-58, and Tables 3 and 4 at cols. 27-30, example 1 and comparative example 10, which does not comprise any minute resin particles.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Anno, to add the Anno minute resin particles **a** and **b** to the surface of the toner particles rendered obvious over the teachings of Emoto'859 in the manner taught by Anno. That person would have had a reasonable expectation of successfully obtaining a toner that has high flowability, stable charging property, and high cleaning property, as disclosed by Anno.

Instant claims 13 and 14 are written in product-by-process format. The Emoto'859 toner in example 4 is not obtained by the process steps recited in instant claims 13 and 14. However, as discussed above, the combined teachings of Emoto'859 and Anno render obvious a toner that meets the compositional and limitations recited in instant claims 13 and 14 and the toner particle shape recited in instant claims 13 and 14 and that would appear to have very similar properties in use. Accordingly, the toner rendered obvious over the combined teachings of Emoto'859 and Anno appears to be the same or substantially the same as the toner obtained by process steps

recited in instant claims 13 and 14. The burden is on applicants to prove otherwise. In re Marosi, 218 USPQ 289 (Fed. Cir. 1983); In re Thorpe, 227 USPQ 964 (Fed. Cir. 1985); MPEP 2113.

13. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Emoto'859, as evidenced by applicants' admission 2, as applied to claim 1 above, combined with Watanabe.

Emoto'859, as evidenced by applicants' admission 2, renders obvious a toner as described in paragraph 12 above, which is incorporated herein by reference.

Emoto'859 further discloses forming a toner image on a receiving member and fixing the toner image to the receiving member with a fixing roller. Paragraph 0210. However, Emoto'859 does not exemplify the use of the fixing belt device recited in instant claim 28.

Watanabe teaches a fixing device comprising a fixing belt **B** and a pressure roller **R2** to be used in fixing a toner image to a receiving member. The Watanabe fixing device meets the fixing component limitations recited in instant claim 28. The discussion of Watanabe in paragraph 10 above is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings in Watanabe, to use the fixing device comprising a fixing belt and a pressure roller as taught by Watanabe as the fixing device in the image forming method taught by Emoto'859 using the toner rendered obvious over the teachings of Emoto'859 and Anno. That person would have had a reasonable expectation of successfully practicing a method for fixing a toner image that provides a fixed toner image on a receiving member having the benefits disclosed by Emoto'859 and Anno and that prevents toner offset and paper jam at the fixing nip as taught by Watanabe.

14. Applicants' arguments filed on Jun. 27, 2008, as applicable to the above rejections over Yagi and over Emoto in paragraph 10 and paragraphs 12 and 13, respectively, have been fully considered but they are not persuasive.

Applicants assert that neither Yagi nor Emoto is prior art to the subject matter recited in instant claims 13, 14, and 28 because they have perfected their claim to foreign priority under 35 U.S.C. 119 to the priority document, Japanese Patent Application No. 2002-365782.

Applicants' assertion is not persuasive. The "revised" certified English-language translation of said priority document

filed on Jun. 27, 2008, does not provide an adequate written description of the subject matter recited in instant claims 13, 14, and 28 as set forth under 35 U.S.C. 112, first paragraph, for the following reasons:

(1) There is no description in the revised translation of the toner particles having a spindle form as recited in instant claims 13 and 14.

(2) The revised translation in paragraph 0009 describes a fixing method for fixing an unfixed toner image formed on a recording medium "by passing the recording medium through a nip portion formed by a heated fixing belt and a pressurizing member to perform contact heat fixing, wherein the fixing method is characterized in that: the fixing belt winds around the pressurizing member before the nip portion; the nip has a shape such that the nip is concaved toward a side of the fixing belt containing the toner image . . ." (emphasis added). Instant claim 28 is broader than the fixing method described in the revised translation because claim 28 encompasses fixing methods where the fixing belt is not heated, and methods where the fixing belt does not wind around the pressurizing member before the nip portion formed by the fixing belt and the pressurizing member.

Accordingly, for the reasons discussed above, Yagi is prior art to the subject matter recited in instant claim 28 and Emoto is prior art to the subject matter recited in instant claims 13, 14, and 28. Thus, the rejections in paragraphs 10, 12, and 13 stand.

15. Claims 1, 8, 10, 13, 14, 21-23, and 28 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-21 of US 7,396,630 (B2) (Watanabe'630), as evidenced by that portion of the disclosure in Watanabe'630 that supports the subject matter recited in the claims in Watanabe'630.

Although the conflicting claims are not identical, they are not patentably distinct from each other because the subject matter claimed in Watanabe'630 renders obvious the subject matter recited in the instant claims.

Reference claim 1 recites an image forming method comprising the step of fixing a toner image on an image bearing material by passing the image bearing material through a nip between a fixing belt and a pressure member as recited instant claim 28. The toner comprises toner particles comprising a binder resin, a colorant, and a release agent and a particular material embedded on the surface of the toner particles. The

binder resin comprises a modified polyester resin and a second resin having a weight average molecular weight of 2,000 to 10,000 as recited in instant independent claims 1 and 21. The binder resin has a glass transition (T_g) temperature that meets the T_g range recited in instant independent claims 1 and 21. The particulate material has an average particle diameter that meets the particle size limitation recited in instant claims 1 and 21. The particulate material comprises a cross-linked resin that comprises a vinyl resin. The term "crosslinking agent" broadly recited in the instant claims encompasses anything that aids the crosslinking process. It is also well known in the polymer art that crosslinked polymers are cross-linked by crosslinking agents. Thus, on the present record, the reference claims of Watanabe'630 recite a crosslinked particulate resin material that meets the particulate resin crosslinked with a crosslinking agent as recited in instant claims 1, 10, and 21.

The claims in Watanabe'630 do not expressly recite that the modified polyester resin recited in reference claim 1 is a urea-modified polyester resin. However, that portion of Watanabe'630 that supports the modified polyester resin recited in the reference claims teaches that the modified polyester resin can be a urea-modified polyester resin. See Watanabe'630, col. 7, lines 19-21, and example 1 at cols. 31-32. The urea-modified

polyester resin meets the urea-modified polyester resin recited in the instant claims. When addressing the issue of whether a claim in an application defines an obvious variation of an invention claimed in a patent, "those portions of the specification which support the patent claims may be also be examined and considered." See MPEP 804, II.B.1, p. 800-22, citing In re Vogel, 164 USPA 619, 622 (CCPA 1970).

Reference claim 3, which depends from reference claim 2, which in turn depends on reference claim 1, requires that the particulate material have a Tg of 55 to 100°C that meets the Tg limitation as recited in instant claims 1 and 21. Reference claim 4, which depends from reference claim 1, requires that the toner binder resin comprise THF insolubles that meet the THF-insoluble limitations recited instant claims 1 and 21. Reference claims 6, 8, 11, 12, 20, and 21, which depend from either reference claims 1 or 2, recite the binder resin limitation, the particulate material limitations, the toner particle shape limitations, and other toner compositional limitations recited in instant dependent claims 8, 10, 13, 14, 22, and 23, which depend from instant claim 1.

It would have been obvious for a person having ordinary skill in the art, in view of the subject matter recited in the claims of Watanabe'630, as evidenced by that portion of the

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disclosure in Watanabe'630 that supports the subject matter recited in the claims of Watanabe'630, to make and use a toner as recited in the instant claims. That person would have had a reasonable expectation of successfully obtaining a toner and a method of fixing a toner image using said toner that meet the limitations recited in the instant claims.

Instant claims 1, 8, 10, 13, 14, 21-23, and 28 are written in product-by-process format. The reference claims in Watanabe'630 do not recite that the toner is obtained by the process steps recited in the instant claims. However, as discussed above, the subject matter claimed in Watanabe'630, as evidenced by that portion of the disclosure in Watanabe'630 that supports the subject matter recited in the claims of Watanabe'630, renders obvious a toner that meets the compositional and limitations recited in the instant claims and that would appear to have very similar properties in use. Accordingly, the toner rendered obvious over the subject matter claimed in Watanabe'630, as evidenced by that portion of the disclosure in Watanabe'630 that supports the subject matter recited in the claims of Watanabe'630, appears to be the same or substantially the same as the toner obtained by process steps recited in the instant claims. The burden is on applicants to

prove otherwise. In re Marosi, 218 USPQ 289 (Fed. Cir. 1983);
In re Thorpe, 227 USPQ 964 (Fed. Cir. 1985); MPEP 2113.

16. Claim 27 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-21 of US 7,396,630 (B2) (Watanabe'630), as evidenced by that portion of the disclosure in Watanabe'630 that supports the subject matter recited in the claims in Watanabe'630, in view of US 4,927,728 (Isoda).

The subject matter claimed in Watanabe'630, as evidenced by that portion of the disclosure in Watanabe'630 that supports the subject matter recited in the claims in Watanabe'630, renders obvious a toner as described in paragraph 15 above.

For the reasons discussed in paragraph 15, that toner meets the toner limitations recited in instant claim 27.

The reference claims in Watanabe'630 do not recite that the toner can be used in a developer comprising a carrier as recited in instant claim 27.

However, two-component developers comprising a toner and a carrier are well known in the toner art. According to Isoda, conventional two-component developers usually comprise toner particles made of, for example, resins and coloring agents, and carrier particles made of, for example, iron particles or glass

beads. In the course of mechanical mixing the carrier particles with the toner particles to impart electrostatic charge to the toner particles, the surface of the conventional carrier particles is "eventually covered with resin contained in or released by the toner particles." When the surface of the carrier particles is covered with the resin, a condition generally referred to as "spent phenomenon," "the carrier particles no longer function as active carrier particles capable of substantially charging toner particles for development. As a result, the charging characteristics of the carrier particles deteriorate with time while in use. In the end, it becomes necessary to replace the entire developer by a new developer." Col. 1, lines 17-22 and 44-63. According to Isoda, to prevent the "spent phenomenon," methods of coating the carrier particles with a variety of resins have been proposed but none have been realized. Col. 1, line 64, to col. 2, line 2.

To overcome the problems mentioned above, Isoda teaches carrier particles coated with a silicone resin that is hardened with an organic tin compound. Col. 2, lines 51-54, and example 1 at col. 7, line 46, to col. 8, line 16. The Isoda carrier particles meet the carrier compositional limitation recited in instant claim 27. The carrier particles have a high capability for charging toner particles and a "small surface

energy" such that the toner particles are free from the spent phenomenon. The coated carrier particles are inexpensive and provide two-component developers capable of "yielding high quality images in a stable manner." Col. 2, lines 34-45. Isoda shows that its carrier is capable of charging both positively chargeable toners and negatively chargeable toners. Col. 8, lines 17-40; col. 9, line 65, to col. 10, line 2; col. 10, lines 15-34; and Figs. 1, 7, and 9.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Isoda, to use the Isoda carrier particles coated with a silicone resin hardened with an organic tin compound in combination with the toner rendered obvious over the subject matter claimed in Watanabe'603, as evidenced by portion of the disclosure in Watanabe'630 that supports the subject matter recited in the claims in Watanabe'630. That person would have had a reasonable expectation of successfully obtaining a two-component developer that is capable of providing high quality images in a stable manner without the occurrence of the "spent phenomenon."

17. The following rejection is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

18. Claims 1, 8, 10, 13, 14, 21-23, and 26 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 26, 29, 33, 35, 37, 40, 41, and 48-51 of copending Application No. 11/475,165 (Application'165).

The examiner notes that the rejection is based on the amended claims filed on Jun. 19, 2008, in Application'165.

Although the conflicting claims are not identical, they are not patentably distinct from each other because the subject matter recited in the claims of Application'165 renders obvious the subject matter recited in the instant claims.

Reference claim 29, which depends from reference claim 26, recites a method of making a toner that meets the steps recited in instant claims 1, 21, and 26. The particulate material comprises a crosslinked resin and has a glass transition temperature (Tg) of 55 to 100°C that meets the particulate material Tg recited in instant claims 1, 21, and 26. The term "crosslinking agent" broadly recited in the instant claims encompasses anything that aids the crosslinking process. It is also well known in the polymer art that crosslinked polymers are cross-linked by crosslinking agents. Thus, on the present record, the reference claims in Application'165 recite a

crosslinked particulate resin material that meets the particulate resin crosslinked with a crosslinking agent as recited in instant claims 1, 21, and 26. The resultant toner particles comprise a binder resin that comprises a urea-modified polyester resin and a second resin having a weight molecular weight of 2,000 to 10,000. The binder resin has a Tg that is within the binder resin Tg recited in instant claims 1, 21, and 26. Reference claim 33 and 48, which each depends from claim 26, further require that the binder resin comprises tetrahydrofuran-insoluble components in an amount of 2 to 30% by weight or 1 to 30% by weight, which meet the amounts recited in instant claims 1 and 26 and instant claim 21, respectively. The particulate material is embedded on the surface of the toner particles as recited in instant claims 1, 21, and 26.

Reference claim 35, 37, 40, 41, 49, and 50, which each depends from reference claim 26, recite: the weight ratio of urea-modified polyester resin and to the second resin, where the second resin is an unmodified polyester resin; the particulate material limitations; and toner limitations that meet the limitations recited instant claims 8, 10, 13, 14, 22, and 23.

It would have been obvious for a person having ordinary skill in the art, in view of the subject matter recited in the claims of Application'165, to make and use a toner as recited in

the instant claims with a method of making as recited in the instant claims. That person would have had a reasonable expectation of successfully obtaining a toner and a method of making a toner that meets the limitations recited in the instant claims, wherein the resultant toner can be used in an electrophotographic imaging method to form toned images.

19. Claim 27 is provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 26, 29, 33, 35, 37, 40, 41, and 48-51 of copending Application'165 combined with Isoda.

The subject matter claimed in Application'165 renders obvious a toner as described in paragraph 18 above.

For the reasons discussed in paragraph 18, that toner meets the toner limitations recited in instant claim 27.

The reference claims in Application'165 do not recite that the toner can be used in a developer comprising a carrier as recited in instant claim 27.

However, two-component developers comprising a toner and a carrier are well known in the toner art as shown by Isoda. Isoda teaches carrier particles coated with a silicone resin that is hardened with an organic tin compound. The Isoda carrier particles meet the carrier compositional limitation

recited in instant claim 27. The discussion of Isoda in paragraph 16 above is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Isoda, to use the Isoda carrier particles coated with a silicone resin hardened with an organic tin compound in combination with the toner rendered obvious over the subject matter claimed in Application'165. That person would have had a reasonable expectation of successfully obtaining a two-component developer that is capable of providing high quality images in a stable manner without the occurrence of the "spent phenomenon."

20. Applicants' arguments filed on Jun. 27, 2008, as applicable to the rejections in paragraphs 15, 16, 18, and 19 above have been fully considered but they are not persuasive.

Applicants assert that if the provisional rejections are the only issue remaining in the case, the examiner should covert the provisional rejections in the other application to a double patenting rejection and withdraw the provisional rejections in the instant application.

Applicants' assertion is not persuasive. First, the rejections in paragraphs 15 and 16 over Watanabe'630 are not provisional. Second, the provisional rejections in

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paragraphs 18 and 19 over Application'165 are not the only remaining issue in the instant specification. Accordingly, the rejections in paragraphs 15, 16, 18, and 19 stand.

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janis L. Dote whose telephone number is (571) 272-1382. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Mark Huff, can be reached on (571) 272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Any inquiry regarding papers not received regarding this communication or earlier communications should be directed to Supervisory Application Examiner Ms. Sandra Sewell, whose telephone number is (571) 272-1047.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Janis L. Dote/
Primary Examiner, Art Unit 1795

JLD
Sep. 6, 2008